

REMARKS

This application has been carefully reviewed in light of the Office Action dated February 29, 2008. Claims 1, 2, 4 to 13, 5 to 24 and 26 to 33 are pending in the application, of which Claims 1, 12 and 23 are independent. Reconsideration and further examination are respectfully requested.

Claims 1 to 33 were rejected under 35 U.S.C. § 112, second paragraph, as allegedly being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Without conceding the correctness of the rejection, Applicant submits that the foregoing amendments to the claims addressed the Examiner's concerns. Accordingly, Applicant respectfully requests reconsideration and withdrawal of this rejection.

Claims 1, 5, 11, 12, 22, 23 and 33 were rejected under 35 U.S.C. § 102(b) over U.S. Patent No. 6,181,445 (Lin). Claims 2, 4, 13, 15, 16, 24 and 26 to 30 were rejected under 35 U.S.C. § 103(a) over Lin in view of U.S. Patent No. 6,728,401 (Hardeberg) and further in view U.S. Patent No. 5,539,540 (Spaulding). Reconsideration and withdrawal of this rejection are respectfully requested.

Turning now to the claims, Claim 1 is directed to a method of correcting a forward model of an input color device. The method comprises mapping an input color value generated by the input color device into a mapped color value in a device-independent color space by using the forward model of the color input device, clipping a negative luminance component of the mapped color value in the device-independent color value to a non-negative value, determining whether or not the mapped color value with the clipped luminance component in the device-independent color space is outside a human

visual gamut, and generating a corrected color value in the device independent color space by clipping the device-independent color value outside the human visual gamut to a boundary of the human visual gamut based on the determination result.

Therefore, the present invention concerns correcting a “crude” forward model of the color input device. The first crude forward model can come from a straightforward statistical/mathematical fitting of measurement data to a predetermined model of the color input device’s response to a color target (such as by using polynomials).

A data processing system in accordance with the present invention overcomes certain difficulties when the crude forward model produces non-physical or non-visible color values by ensuring that these color values are mapped to color values that are found in a human visual gamut. Furthermore, such a data processing system accomplishes this correction in a 2-dimensional chromaticity space instead of a 3-dimensional space as utilized by a typical color management system (such as the one described in Lin). In addition, even if the mapping direction of the typical color management system is chosen to preserve lightness so that a constant lightness section is used for processing (such as that shown in Fig. 6A of Lin), such a lightness section changes with lightness so that the typical color management system must still perform 3-dimensional processing.

In correcting the crude forward model, a data processing system in accordance with the present invention uses two independent features that are not found in Lin. The two features are clipping a negative luminance component of the mapped color value in the device-independent color space to a non-negative value and clipping the mapped color value in the device-independent color value to a boundary of a human visual

gamut if it is determined that the mapped color value in the device-independent color space is outside the human visual gamut.

In contrast, Lin merely discloses typical gamut mapping as used in an initial stage of a color management pipeline. That is, Lin discloses invoking the device model to convert device dependent values to device independent values. (See Lin, Col. 7 Lines 19 to 36). Furthermore, a data processing system in accordance with the present invention clips a negative luminance component of the mapped color value in the device-independent color value to a non-negative value. In contrast, Lin discloses changing all color values to non-negative limits of a device gamut, even if the color values started as non-negative values already. During the changing process, the chroma, i.e. u , v (but not chromaticity u' , v') is also clipped to zero. (See Fig. 6 B of Lin).

Therefore, Applicant respectfully submits that Lin is not seen to disclose or to suggest all of the features of independent Claim 1. In particular, Lin is not seen to disclose or to suggest at least the features of clipping a negative luminance component of the mapped color value in the device-independent color space to a non-negative value, determining whether or not the mapped color value in the device-independent color space is outside a human visual gamut; and generating a corrected color value in the device independent color space by clipping the mapped color value in the device-independent color value outside the human visual gamut to a boundary of the human visual gamut based on the determination result.

In light of these deficiencies in Lin, Applicant submits that amended independent Claim 1 is now in condition for allowance and respectfully requests same.

Amended independent Claims 12 and 23 are directed to a data processing system and a computer-readable medium, respectively, substantially in accordance with the method of Claim 1. Accordingly, Applicant submits that Claims 12 and 23 are also now in condition for allowance and respectfully requests same.

The other pending claims in this application are each dependent from the independent claims discussed above and are therefore believed allowable for the same reasons. Because each dependent claim is also deemed to define an additional aspect of the invention, however, the individual consideration of each dependent claim on its own merits is respectfully requested.

In view of the foregoing amendments and remarks, the entire application is believed to be in condition for allowance, and such action is respectfully requested at the Examiner's earliest convenience.

CONCLUSION

Applicant's undersigned attorney may be reached in our Costa Mesa, CA office at (714) 540-8700. All correspondence should continue to be directed to our below-listed address.

Respectfully submitted,

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